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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,096	07/27/2001	Jyoti Mazumder	POM-12402/29	9765

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EXAMINER

FULLER, ERIC B

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 07/10/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/917,096

Applicant(s)

MAZUMDER ET AL.

Examiner

Eric B Fuller

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 11, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (US 5,837,960) in view of Jeanette et al. (US 6,046,426).

Lewis teaches a direct metal deposition controlled by a computer-aided design program (abstract; column 15, lines 35-68). The powder is chosen to impart different properties to the article being coated, including wear resistance, phase difference, density, hardness, and conductivity and may vary by location (column 24, line 29 - column 25, line 68). As the article is being melted and solidified as it is being formed, this reads on being a non-equilibrium synthesis. The article is a tool or a die (column 4, lines 8-10). Powder is fed into the melt pool that the laser creates (column 5, lines 60-68). A description of the to-be-fabricated article is provided to the CAD equipment (column 15, lines 35-45). The reference fails to teach the optical monitoring for feedback control.

However, Jeanette teaches that optical monitoring for feedback control is used in order to prevent variations in layer thickness when depositing powder into a melt pool that a laser creates (column 8, lines 28-60). Therefore, it would have been obvious at

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the time the invention was made to a person having ordinary skill in the art to utilize optical monitoring for feedback control in the process taught by Lewis. By doing so, one would reap the benefits of preventing variations in layer thickness.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (US 5,837,960) in view of Jeanette et al. (US 6,046,426), as applied to claim 7 above, and further in view of Parks (US 5,952,057).

Lewis, in view of Jeanette, teaches the limitations of claim 1. Additionally, Lewis teaches that the powder used is dependant on the desired property that is to be incorporated into the article and is not limited by the process, but fails to teach selecting a powder such that corrosion and oxidation resistance is increased. However, Parks teaches that it is well known to impart corrosion and oxidation resistance to an article by laser deposition and teaches the appropriate powders for achieving such (column 2, lines 21-44). Therefore, to would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize the powders taught by Parks in the process taught by Lewis in view of Jeanette. By doing so, one would reap the benefits of increased corrosion and oxidation resistance.

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (US 5,837,960) in view of Jeanette et al. (US 6,046,426), as applied to claim 7 above, and further in view of Singer et al. (US 5,875,930).

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Lewis, in view of Jeanette, teaches the limitations of claim 7, but fails to teach the use of cooling channels and thermal boundaries in the to-be-fabricated tool. However, Singer teaches that cooling channels and thermal barriers are used in tools such that the temperature can be easily controlled when the tool is in use (column 2, lines 1-30). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize cooling channels and thermal boundaries in the tool taught by Lewis in order to easily control the temperature when the tool is in use.

### ***Response to Arguments***

Applicant argues that the 35 U.S.C. 102(e) rejections of the previous action fail to teach the claims as they have been amended. Specifically, they fail to teach the use of optical monitoring for feedback control. Examiner agrees. However, this argument is moot in view of the new grounds of rejection. The new grounds of rejection read on the limitations of the amended claims.

Applicant argues the rejection of claims 12 and 13. This argument is also moot in view of the new grounds of rejection.

Applicant argues the combination of Lewis in view of Singer with respect to claims 19 and 20. Although claims 19 and 20 are rejected under new grounds of rejection, in so far that the arguments made by the applicant may still be pertinent, it is noted that the applicant has only argued the details of what Singer does and does not teach. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413,

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208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Regardless, the examiner concedes that Singer teaches a tool that is made by means different than that of Lewis. However, the tool of Singer has the advantage of having a controllable temperature because it has cooling channels. Lewis produces a tool. It would have been obvious to incorporate cooling channels in the tool produced by Lewis such that it also has the benefit of having a controllable temperature.

All other arguments are moot in view of the new grounds of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B Fuller whose telephone number is (703) 308-6544. The examiner can normally be reached on Mondays through Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck, can be reached at (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



EBF  
July 7, 2003



**MICHAEL BARR**  
**PRIMARY EXAMINER**